

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re DIVISIONAL application of)	
HONGYONG ZHANG et al.)	
Based on Serial No. 09/356,376)	Group Art Unit: 2871
Filed: July 19, 1999)	Examiner: K. Parker
For: PROCESS FOR LASER PROCESSING)	
AND APPARATUS FOR USE IN THE)	
SAME)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. 1.56 and 37 C.F.R. 1.97-1.99, Applicant submits herewith a Form PTO-1449 listing references known to Applicant and requests that these references be made of record in the above identified application. Copies of the references listed are submitted herewith in accordance with 37 C.F.R. 1.98(a).

The Examiner's attention is directed to U.S. Patent 4,859,908, which is listed on the PTO Form 1449 attached herewith for the Examiner's consideration.

Japanese Patent Laid-Open No. 50-117374 was cited by the Japanese Patent Office as it teaches to dope an insulating film with an impurity.

Japanese Patent Laid-Open No. 64-011323 teaches the use of a pulsed laser beam for introducing an impurity. This reference discusses the number of pulses and the damage to the semiconductor surface. Fig. 3 shows a relation between the number of laser pulses relative to the unevenness of a surface (nm).

The references listed on the attached Form PTO-1449 were cited in parent application Serial No. 09/356,376 and predecessor Application Serial Nos. 09/145,543; 08/411,973 and 07/971,237 and copies of the references can be found in those applications.

Respectfully submitted,



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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	Based on 09/356,376
				Filing Date	July 19, 1999
				First Named Inventor	Hongyong ZHANG et al.
				Group Art Unit	2871
Examiner Name	Kenneth Parker				
Sheet	1	of	3	Attorney Docket Number	0756-7224

U.S. PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
		5,849,043		Zhang et al.	12/15/98	
		4,177,372		Kotera et al.	12/04/79	
		4,370,175		Levatter	01/25/83	
		4,436,557		Wood et al.	03/13/84	
		4,826,711		Yamazaki et al.	05/02/89	
		4,979,181		Nakanose et al.	12/18/90	
		5,174,876		Buchel et al.	12/29/92	
		5,017,277		Yoshida et al.	05/21/91	
		5,205,036		Yamazaki	04/27/93	
		5,229,081		Suda	07/20/93	
		5,252,498		Yamazaki	10/12/93	
		5,272,361		Yamazaki	12/21/93	
		5,296,405		Yamazaki et al.	03/22/94	
		5,313,076		Yamazaki et al.	05/17/94	
		5,316,969		Ishida et al.	05/31/94	
		5,323,013		Kelly et al.	06/21/94	
		5,346,850		Kaschmitter et al.	09/13/94	

FOREIGN PATENT DOCUMENTS							
Examiner Initials ¹	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Office ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	58-103140			06/20/83	Abst.
		JP	55-150238			11/22/80	Abst.
		JP	56-30721			03/27/81	Abst.
		JP	62-142370			06/25/87	Abst.

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		X. Tong, et al., "Effect of Si-Substrate Heating During Laser-Induced B-Doping," Appl. Phys. A Vol. 59 (March 1994) pp. 189-191.	

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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				Examiner Name		Kenneth Parker	
Sheet	2	of	3	Attorney Docket Number		0756-7224	

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		Number	Kind Code ² (if known)			
		5,566,009		Yamazaki et al.	10/15/96	
		5,583,369		Yamazaki et al.	12/10/96	
		5,946,561		Yamazaki et al.	08/31/99	
		5,938,839		Zhang	08/17/99	
		5,899,547		Yamazaki et al.	05/04/99	
		4,851,363		Troxell et al.	07/25/89	

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		Office ³	Number ⁴	Kind Code ⁵ (if known)				
		JP	01-259530			10/17/89		Full
		JP	50-117374			09/13/75		Concise Stmt.
		JP	62-130562			06/12/87		Abst.
		JP	64-011323			01/13/89		Abst.
		JP	02-222545			09/05/90		Full
		JP	02-224339			09/06/90		Full
		JP	02-226732			09/10/90		Abst.
		JP	01-156725			06/20/89		Full
		JP	57-162339			10/06/82		Abst.

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		A Slaoui, et al., "Boron Doping of Silicon by Excimer Laser Irradiation," J. Appl. Phys. A 50 (1990) pp. 479-484.		
		Kawachi et al., "Large Area Doping Process for Fabrication of Poly-Si Thin Film Transistor Using Bucket Ion Source and XeCl Excimer Laser Annealing," December 1990, pp. L2370-2372, Jpn. J. Appl. Phys. 29(12) L2370.		
		Sameshima et al., "XeCl Excimer Laser Annealing Used to Fabricate Poly-Si TFT's," October 1989, pp. 1789-1793, Japanese J. of Appl. Phys., Vol. 28, No. 10.		

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PTO/SB/08A (08-00)

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		5,521,107		Yamazaki et al.	05/28/96	
		6,013,928		Yamazaki et al.	01/11/00	
		6,331,723	B1	Yamazaki et al.	12/18/01	
		6,195,139		Yamazaki et al.	02/27/01	
		4,859,908		Yoshida et al.	08/22/89	
		4,734,550		Imamura et al.	03/29/88	
		5,372,836		Imahashi et al.	12/13/94	
		5,861,337		Zhang et al.	01/19/99	
		6,261,856		Shinohara et al.	07/17/01	

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		JP	54-131866			10/13/79		Abst.
		JP	01-101625			04/19/89		Abst.
		JP	02-222154			09/04/90		Full

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		Semiconductor World, "Excimer Laser Annealing Apparatus," pp. 196-197, October 1, 1992, (with full English translation)	

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